DOCUMENT RESUME

ED 136 155 CG 011 195

AUTHOR Reis, Harry T.; Porac, Joseph F.
TITLE Equity and the Perception of Social Relationships.
PUB DATE Sep 76
NOTE 24p.; Paper presented at the Annual Convention of the American Psychological Association (84th, Washington, D.C., September 3-7, 1976) ; Hard copy not available due to marginal legibility of original

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Attachment Behavior; Attitudes; *Interpersonal Relationship; Perception; Research Projects; Role Perception; *Sex Differences; *Social Attitudes; *Social Behavior; Social Life; Social Psychology

ABSTRACT

This study focuses on the roles of partner-and self-perception in the stability and quality of male-male, female-female, female-male, and male-female interpersonal relationships. The results reveal that, with the exception of male same-sex relationships individuals perceive greater satisfaction from "maximizing" or self-enhancement choices in partners, as opposed to the "equity theory." (MML)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED136155

EQUITY AND THE PERCEPTION OF SOCIAL RELATIONSHIPS

Harry T. Reis

and

Joseph F. Porac

University of Rochester

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Paper presented at a symposium entitled Perspectives on Social Interaction at the 84th annual convention of the American Psychological Association, Washington, D.C., September 1976.

BEST COPY AVAILABLE

HARD COPY NOT AVAILABLE

CE 011 145

When this symposium was first being planned, we were faced with a somewhat staggering problem: to speak about one of the most spoken about topics that people have ever wondered about. This we have chosen to do by tackling a single phenomenon -- the actual interactions our volunteers participate in in the course of their everyday activities -- and examining it within a variety of perspectives. Thus, you have already heard about the content and development of their interaction patterns -- both for college students and for young children; about the factors in their up-bringing which influence their current social behavior; about how they perceive people; and about the relationship between their self-perceptions and general sociability

What I would like to describe is some beginning work which attempts to combine a number of these viewpoints into a theoretical framework about the nature of social relationships. How do people's perceptions of themselves and their interactions relate to their feelings about those relationships, and their progression over time? A reading of the literature presents two predominant perspectives on this question, both of them well-documented. The first, generically grouped as equity theories, postulates that people are most satisfied when they believe their qualities match those of their partners. According to the equity point of view, they may prefer to interact with more desirable others, but these relationships are unstable and will likely dissipate. Though the process by which this develops is unclear, instability and dissatisfaction may result from the guilt of the "over-rewarded"partner, the deprivation of the "under-rewarded" person, or of course, both. Either way, stable, satisfying, enduring relationships are most likely when the participants feel they are more or less evenly matched -- though the match need not occur on the same dimension.

It is a much more fluid exchange. One person might, for example, trade her superior intelligence for his greater physical attractiveness. On some general level, however, an equitable balance is perceived.

An alternative point of view might be labelled maximizing or self-enhancement. This notion stipulates that people most prefer to interact with highly desirable others, and to the extent that they are perceived less positively, the relationship is less rewarding and consequently less likely to continue. The problem with a maximizing principle is that what is maximizing for one partner would be minimizing for the other if they share similar perceptions and values. However, if it is true that the most satisfying relationship is maximizing, then there is room for both active striving and cognitive changes in such a direction.

I do not wish to imply that I believe these views to be contradictory. Although they may seem so at first glance, they are not. One of many interfaces, which we will encounter later, suggests a modest tendency to perceive one's partners just a bit more positively than oneself within a relationship that is generally equitable. This is analogous to the preference for advantageous inequities which equity theorists have described in economic situations. I do mean to imply that there are gaps in our understanding of how these tendencies interact in the progression of attraction, interaction and relationships. The point of this research is to examine how self-perceptions, perceptions of one's interaction partners, and the relative differences between these impressions relate to a person's feelings about that relationship, and the course their interaction takes over time.

There is a general question of orientation -- or perhaps underlying assumptions is a better phrase for it -- which needs to be considered before discussing our results. This question asks just how valid is it to examine the exchange processes in social relationships in terms of trait impressions. Equity theory stipulates that the relevant dimensions in any interaction are "inputs" -- what one contributes to a relationship -- and "outcomes" -- what one gets out of it. In a great many interpersonal attraction studies, inputs and outcomes are compared on fairly apparent, superficial characteristics -- physical attractiveness, status, popularity. In discussing actual on-going relationships, it seems necessary to extend this list more generally to those qualities which each person brings to the relationship, and which characterize their interactions. In a very real sense, what one contributes is oneself and what one gains is the other person. Self- and other-perceptions can in this way be thought of as perceived inputs and outcomes in a social exchange, and their relative values as a measure of how equitable (or evenly matched) their relationship appears to the respondent.

Determinants of Satisfaction and Fairness

With this formulation in mind, we decided to see how perceptions of self and other related to two central affective evaluations of a relationship: satisfaction and perceived fairness. More specifically, our strategy was to isolate those patterns of impressions which best predicted satisfaction and fairness in the four self-other sex pairings. Joe Porac has already described how our respondents rated themselves and their closest male and female interactants along 14 bipolar trait scales. At the same time, they were asked to indicate on similar scales how satisfying that relationship

was for them and how fair it appeared to be.

For each of the 14 characteristics, as well as the overall evaluation which was obtained by summing across all 14 dimensions, our strategy was to enter their self-evaluation, their evaluation of this other person, the difference between these two ratings, and the absolute value of this difference into a series of hierarchial multiple regression analyses predicting satisfaction and fairness. Of the latter two terms, the difference between self and other was used to represent input differences sensitive to direction; the absolute value of this difference was included to test for inverted "V" effects -- that is, decreases in satisfaction or perceived fairness as one moves in either direction from equality, as equity theory would seem to predict.

Such an extensive series of inter-correlated analyses of course carries with it an inconveniently large probability of chance results. To compensate for the unavoidable pitfalls, we utilized what might best be labelled "interocular pattern analysis" -- that is, to be considered a particular result had to be strong and it had to be consistent. To this end, the factor structures reported by Porac provided a framework. Any variable yielding a particular pattern of results had to be substantiated by other variables loading on the same factor. Although this is far from a formal procedure, it does eliminate many obscure, trivial and "chancey" results and would seem to be desirable in any research using large numbers of variables and analyses.

Looking first at the data for opposite-sex relationships, some interesting patterns emerge. Consistently, satisfaction and fairness are best predicted as a linear function of how positively the other person is evaluated, regardless of whether we are talking about females or males describing their closest opposite sex friend. This can be seen in the first slide, which

presents separate hierarchial regression analyses using the overall evaluations as predictors. That variable which accounted for the largest proportion of variance was allowed to enter the analysis first; the additional variance accounted for by subsequent variables was then tested for significance to see if they added any appreciable information (cf. columns 2, 3, and 4). By comparing a variable's contribution to the overall regression equation with its single zero-order correlation (column 5), we can determine just what each term tells us uniquely about satisfaction or fairness, and what it shares with other effects. For example, for males, their overall evaluation of their female friends best, and I might add rather strongly, predicts how satisfying this relationship is, and how fair it appears to be. None of the other terms adds any consequential variance. Thus, the significant correlation with the self-other difference is most probably a function of other ratings, and not self-perceptions or any independent measure of difference.

Given the rather substantial proportion of variance accounted for (51%), this result carries some interesting implications. Males find their closest female relationships least satisfying and least fair when they perceive their partner less favorably; the more positively they see her the more satisfying and fair the relationship. Furthermore, this pattern held across all of the evaluative dimensions <u>except</u> social desirability -- the factor which loaded on physical attractiveness, sex appeal, and popularity. This factor and each of its individual items bore no relation to satisfaction or fairness. Whatever the role of physical beauty in attraction, it may well have little impact on feelings about actual, on-going relationships. Instead, more socially-based characteristics -- personability, genuineness, competence --

related to satisfaction and fairness. Perhaps it is true, as Walster and Berscheid (1974) hinted, that attractive individuals fail to develop certain social skills by learning too soon to rely on more superficial means of attraction and interaction.

More germane to the point of this paper is the finding of a linear relation between impressions and satisfaction and fairness, thereby supporting a maximizing hypothesis and contra-indicating any notions of matching. These males were clearly most pleased about their interactions with more personable and competent women. The pattern for females is highly similar. Satisfaction in their closest male relationship is strongly related to their evaluations of him, and none of the other variables. Although fairness is likewise best predicted by other evaluations, now the absolute difference between self and other contributes a significant share of unique variance. If we recall that this term in essence tests for equity by examining differences irrespective of which partner is rated more favorably, then it would seem that these females are perceiving unfairness where either partner is evaluated more favorably. This effect and the stronger linear trend hang together beautifully: an inverted "V" whose right side has been raised. Or, to put it in words, the fairest relationship occurs when one's partner is perceived slightly more favorably than oneself. Large discrepancies are less fair, but a difference of a given magnitude is fairer when the other person is favored rather than oneself. This is, by the way, consistent with the payment inequity literature. Subjects are traditionally more tolerant of overpay than underpay, and we might say that these females see a relationship with a male friend as fairer if they are over-rewarded by him rather than

under-rewarded. But note this was only true for perceived fairness; no such inverted "V" occurred for satisfaction. Apparently they were willing to acknowledge higher Other evaluation relationships as somewhat unfair without any diminution in their satisfaction. Even within these constraints, then, a maximizing point of view is favored. Both males and females were more satisfied with opposite-sex relationships to the extent that they perceived their partner more positively. This hedonistic tendency may have important consequences for the development and stability of a relationship, of course, and this will be discussed later. Matching on personal characteristics does not seem to indicate satisfaction.

Interestingly, the female pattern emerged only on dimensions incorporating ratings of his social desirability and personability. Competence-laden adjectives showed no systematic relation to satisfaction or fairness. Given that competence predicted female attraction to males in Porac's data, perhaps, as with the males for whom social desirability predicted attraction but not satisfaction, the factors which influence opposite sex attraction are independent of those which determine affective reactions to the relationship once interaction has begun. This tempting interpretation is somewhat constrained by the fact that we are dealing with college freshpeople and sophomores, who may have been simultaneously exploring and testing stereotypical attractions. However, it is reminiscent of Levinger's descriptions of the differing characteristics which influence relationships at varied levels of intimacy. To the extent that this pattern generalizes to older individuals, it would seem to highlight the often-cited, seldom-studied process by which first impressions turn into enduring relationships.

The picture for same sex relationships differs, and is less consistent across sex. For males, satisfaction is again best described as an increasing linear function of how positively the Other person is perceived. However, now the degree to which Self and Other are evaluated equivalently adds a significant portion of variance and in addition turns out to be the best predictor of fairness. In other words, matching does reflect fairness in male-male interactions, and is an important determinant of satisfaction. Putting the two effects together, the data again suggest greater acceptance for favorable inequity. The most satisfying relationship is one in which a male's closest male friend is perceived somewhat more positively than himself. Deviations from such a match in either direction imply unfairness, a facet which decreases the satisfaction derived from that relationship. An additional factor enters the analyses here. Self-ratings add a significant proportion of variance in predicting fairness, such that the more positively a male evaluates himself, the fairer he sees this relationship. This factor will appear again in perceived fairness for female-female relationships, and just why self-evaluations should be salient only in same-sex satisfaction is, frankly, unclear. Perhaps the upward striving nature of our heterosexual relationships precludes much concern over self-perceptions.

Interestingly enough, this pattern cross-cuts all of the evaluative dimensions with the exception of the self-competence factor. At least for male-male relationships, there is a sort of halo effect in which positive evaluations of the Other are associated with increased satisfaction regardless of which characteristic it refers to. This raises an interesting digressi Many have spoken of a complementarity principle of social exchange, where

one individual might trade a high level of intelligence for another's attractiveness, amiability or popularity. In all of our interaction categories, no such correlations were found. Trait differences were either positively related, or not at all. Perhaps again, this may not be the case for first impressions.

Satisfaction and fairness for females in their closest same-sex relationships were similar to males with one notable omission. Only Other evaluation predicted satisfaction, and only Self evaluation related to fairness. The matching term shows no appreciable effect in either analysis. Only personability relates to satisfaction. This tendency is identical to that found for opposite-sex relationships, though it occurs on a more limited set of attributes. This is as we might expect, however, as numerous studies have shown female-female dyads to be primarily concerned with the quality of their interpersonal relationship. It is not surprising then, that women should be more satisfied interacting with more personable women, regardless of other attributes.

In concluding this section, the question of just why male-male pairs were most concerned with equity needs to be asked. For three of the four sex-dyad combinations, affect is a positively increasing function of impression favorability -- though the dimensions on which the pattern emerges show meaningful sex-related variations. Many traditional equity researchers have found males more concerned with equitable rewards, particularly when sharing a task or a payoff with another male. Perhaps male socialization, with its emphasis on dominance tempered by dictates for everyone to "do his share" or "pull his load", would lead a male to feel threatened if he was not contributing his share to a relationship -- in this case, by virtue of his

social attributes falling short of those he perceives his male friend to possess. Such feelings would diminish the satisfaction derived from the relationship. This explanation is of course speculative, but it seems to corroborate many informal observations. Of the 9 colleagues I asked to predict which of the sex dyads would be mostly to show dissatisfaction with perceiving one's partner more positively than oneself, 8 replied male-male. It seems to me that further research into the basis for this sex difference would be not only fruitful for a number of areas within social psychology but fascinating as well.

Impressions and the Progression of Social Interaction

Given that these patterns begin to describe how our respondents felt about some of their primary relationships at an early point in the academic year, an important question appears: how did these perceptions influence the progression of their interactions with each other? Equity theory, for example, predicts that relationships involving individuals who do not perceive themselves as evenly matched are likely to be unstable. On the other hand, people would seem to prefer maintaining those relationships which are most satisfying -- which in three of our four sex groupings involved another person viewed more positively than oneself. Thus, our task became a simple one, at least in words: to examine the relationship between perceptions of Self and Other at one point in time, and changes in interaction between that point and another 6 months later. In keeping with the behavior-oriented spirit of the other presentations in this symposium, we decided to focus on two blatant measures of a relationship's evolution: whether or not those individuals are still interacting with each other 6 months later, and changes in the number of interactions they share per day,

corrected for overall differences in total interactions from one semester to the next. I might mention that the interaction records of which we speak are those described by Wheeler earlier, collected over two-week intervals in October and in April.

Let us examine opposite-sex relationships first. For females, the pattern of change reflects what we might have proposed earlier. Recall that females were most satisfied if interacting with highly favorable males, although they did acknowledge a degree of inequity in such a relationship. Here, the less positively they rated themselves, the more likely they were to be continuing a relationship with this person 6 months later, and the more interactions they were sharing. Further, the absolute value of the difference between Self and Other ratings accounts for a significant portion of additional variance. Substantial differences in either direction typified relationships which ended, while smaller discrepancies characterized relationships which endured. Thus, putting these two effects together, we might say that these women continued and even intensified their social interactions with their closest male friend to the extent that they evaluated themselves somewhat less favorably. However, in those relationships in which they described themselves substantially different from him, and especially more positively, future interaction was less likely. Although non-matched relationships turned out to be unstable, the tendency to be relatively more tolerant of over-rewarding inequities persisted. Extremely over-rewarding relationships -- those which they had previously described as highly satisfying but unfair -- were unstable. At least here, the integrating notion that maximizing predicts preference but equity predicts continuity receives support.

For males, interaction changes with their closest female friend are

also most strongly related to their self-evaluations, but curiously, in the opposite direction. The more positive his self-ratings, the more likely he will still be interacting with her 6 months later, and the more often as well. Perhaps this reversal can be informative about the satisfaction pattern discussed earlier. Males were more satisfied with their female relationships the more positively they perceived their partner. This may indicate that the aforementioned upward striving tendency is primarily oriented toward gaining positive feedback about oneself. Since such extrinsic strategies are likely to fail in the long run (especially if their self-perceptions possess some accuracy or prophecy value) maximizing relationships may lose the source of their satisfaction and diminish in importance. This interpretation is, of course, speculative but it does open the door to some interesting questions and research on sex and sex-role differences in the meaning of social interaction.

In contrast, the pattern for male same-sex relationships was clearer. Earlier, we noted that the male-male grouping was most concerned with equitable matches, and their interaction data support this contention. Perceiving a large difference between oneself and another male predicted less frequent interaction over time, and a relationship which was likely to end. Relationships which continued and even increased in frequency of interaction were characterized by equally favorable impressions. There is some maximizing tendency, as before, in that Other evaluations do add a small proportion of variance. However, if the continuity of an interaction is any key, then the importance of matching in male-male relationships is further highlighted.

The picture would not be complete without examining female same-sex

relationships, and unfortunately, these data do not present a complete or consistent picture. But the fact that these changes were least predictable is interesting in and of itself. Although satisfaction and fairness were appreciably related to impressions, the magnitude of this relationship was smaller than in any of the other groupings. In the data which Nezlek and Wheeler have already described, this pairing showed the greatest variation in interaction patterns over the six month period. Perhaps the pervasiveness of these changes, as well as in the underlying factors which Nezlek and Wheeler utilized to account for them, suggests that we must look to more complex patterns in associating impressions with the development of female same sex relationships. And this we are already planning, for it points out the need to delve into these phenomena more deeply.

If it is possible to summarize such an amorphous set of data briefly, I would like to present a very global overview of our results. With the exception of male same-sex pairs, satisfaction in an ongoing, close relationship increases to the extent that one perceives that person more positively. Although there is some recognition that relationships with highly regarded others may be inequitable, this does not diminish their satisfaction, excepting male-male pairs for whom such impressions <u>are</u> distressing. In contrast, matching plays a more important role in the development of these relationships. Those individuals who perceived themselves and their partners as similar were most likely to continue and increase their interactions, although again there was some upward striving tendency in continuing interactions as well.

It seems obvious by now that the equity and the maximizing points of view are not contradictory in any sense. They speak with differential weights to different aspects of the same phenomenon. But if satisfaction is a function of the preference for more desirable others, what is the mechanism by which a highly satisfying relationship becomes unstable? Are their perceptions of each other shared, and to the extent that they are, does instability derive simply from the dissatisfaction of the more positive partner? Or does the imbalance eventually induce anxiety in the less positive partner independently? What factors mediate the changes in people's perceptions of themselves, their friends and their relationships as their interactions progress? How do specific relationships fit into people's perceptions of their more general social environment? What we have presented here is preliminary and exploratory, and we mean most to emphasize our methods and our approach. We believe they will prove useful in expanding the question of who interacts with whom, how much, and why?

Table 1

Regression Analyses for Opposite Sex Relationships

	R	Inc R^2	F (Inc)	P	r	Contributing Factors
MALES (With females)						
Satisfaction						
Other	.717	-	48.84	< .001	.72**	Her Personality (r = .67)
ABS (S-O)	.720	.005	<1		-.24	Her Genuineness (r = .29)
S-O	.725	.007	<1		-.51	Her Competence (r = .29)
Self	.725	.000	<1		.29	My Genuineness (r = .35)
Fairness						
Other	.543	-	19.47	< .001	.54**	Her Genuineness (r = .43)
ABS (S-O)	.546	.003	<1		-.13	Her Personability (r = .29)
Self	.547	.001	<1		.29*	Her Competence (r = .26)
S-O	.547	.000	<1		-.32	
FEMALES (With males)						
Satisfaction						
Other	.724	-	25.38	< .001	.72**	
Self	.740	.022	1.07		.21	His Social Desir. (r = .62)
S-O	.745	.008	<1		-.65**	His Personability (r = .38)
ABS (S-O)	.745	.000	<1		-.29	
Fairness						
Other	.539	-	9.40	< .01	.57**	His Social Desir (r = .55)
ABS (S-O)	.681	.173	6.90	< .02	-.23	His Personability (r = .47)
Self	.691	.013	<1		.28	
S-O	.703	.017	<1		-.40*	

** p < .01
* p < .05

Table 2

Regression Analyses for Same Sex Relationships

	R	Inc R^2	F (Inc)	P	r	Contributing Factors
MALES (with males)						
Satisfaction						
Other	.565	-	21.57	< .001	.56**	His Personability (r = .43)
ABS (S-O)	.700	.171	15.17	< .001	-.55**	His Social Desir (r = .32)
Self	.711	.015	<1		.27*	His Competence (r = .30)
S-O	.712	.001	<1		-.33*	My Friendliness (r = .34)
						My Social Desir (r = .31)
Fairness						
ABS (S-O)	.517	-	16.79	< .001	-.52**	My Social Desir (r = .30)
Self	.613	.108	7.78	< .01	.46**	My Genuineness (r = .30)
Other	.625	.015	<1		.27	
S-O	.625	.000	<1		.11	
FEMALES (with females)						
Satisfaction						
Other	.539	-	9.40	< .01	.54**	Her Personability (r = .61)
ABS (S-O)	.543	.005	<1		-.13	
Self	.544	.001	<1		.16*	
S-O	.544	.000			-.42*	
Fairness						
Self	.369	-	3.63	< .10	.37	My Social Desir (r = .35)
Other	.407	.030	<1		.22	
S-O	.407	.000	<1		.01	
ABS (S-O)	.407	.000	<1		-.13	

** p < .01
* p < .05

Table 3

Regression Analyses for Opposite Sex Interactions

	R	Inc R^2	F (Inc)	P	r	Contributing Factors
MALES (with females)						
Still Interacting ?						
Self	.349	-	3.05	< .10	.35*	My Social Desir
ABS (S-O)	.350	.001	<1		-.10	Her Personability
S-O	.350	.000	<1		.15	Her Competence
Other	.350	.000	<1		.16	
# Per Day Change						
Self	.404	-	4.29	< .05	-.40*	
ABS (S-O)	.435	.026	1.00		.29	
S-O	.442	.006	<1		-.22	
Other	.442	.000	<1		-.14	
FEMALES (with males)						
Still Interacting ?						
Self	.579	-	6.40	< .02	-.59**	My Competence
ABS (S-O)	.744	.218	3.47	< .07	-.39*	His Personability
Other	.759	.023	<1		-.32	His Competence
S-O	.760	.001	<1		.01	
# Per Day Change						
Self	.312	-	1.30		.31	
ABS (S-O)	.347	.023	<1		-.19	
Other	.353	.004	<1		.04	
S-O	.353	.000	<1		.13	

* p < .10
** p < .05

Note: Still Interacting is a dichotomous variable coded (0) = not interacting (1) still interacting presently.

Per Day Change is computed by subtracting the number of interactions in the Spring from the Fall, both divided by the total number of interactions during that time period to correct for overall changes. Positive numbers indicate decreases over time.

Sign differences between the two variables are due to directional differences in scoring.

Table 4

Regression Analyses for Same Sex Interactions

	R	Inc R^2	F (Inc)	P	r	Contributing Factors
MALES (with males)						
Still Interacting ?						
ABS (S-O)	.311	-	3.10	< .09	-.31*	His Personability
Other	.368	.039	1.72		.27	His Social Desir.
S-O	.381	.009	<1		-.11	My Genuineness
Self	.383	.002	<1		.21	
# Per Day Change						
ABS (S-O)	.534	-	11.58	< .005	.53***	
Other	.565	.034	2.11		-.32**	
S-O	.579	.016	<1		.09	
Self	.580	.001	<1		-.29	
FEMALES (with females)						
Still Interacting ?						
S-O	.373	-	2.90	< .10	.37**	Her Competence
ABS (S-O)	.390	.013	<1		-.10	Her Personability
Other	.391	.001	<1		-.30*	
Self	.391	.000	<1		.15	
# Per Day Change						
ABS (S-O)	.270	-	1.42		-.27	
Self	.348	.048	<1		-.19	
S-O	.348	.000	<1		-.04	
Other	.348	.000	<1		-.03	

* p < .10
** p < .05
*** p < .01

Note: Still Interacting is a dichotomous variable coded (0) = not interacting (1) still interacting presently.

Per Day Change is computed by subtracting the number of interactions in the Spring from the Fall, both divided by the total number of interactions during that time period to correct for overall changes. Positive numbers indicate decreases over time.

Sign differences between the two variables are due to directional differences in scoring.